

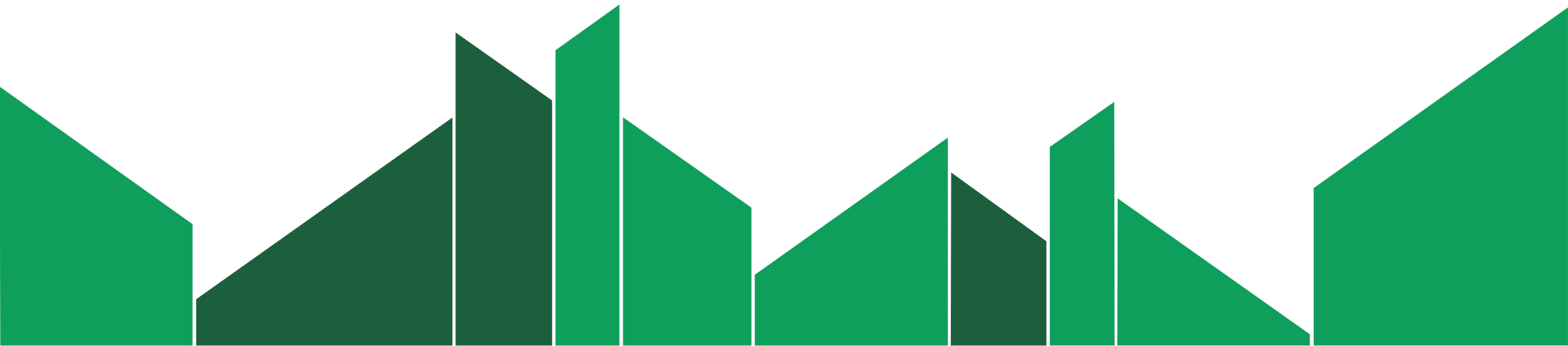


Calculation, optimization and compensation of
greenhouse gas emissions
LEED, BREEAM, WELL, IRIS certified
Engineering concepts of cities and buildings

The best implemented project using environmentally friendly and energy-saving technologies

Moscow Government Prize, 2021

JSC MEDICINA, ONCOLOGICAL CLINIC, Khimki



JSC MEDICINA, ONCOLOGICAL CLINIC, KHIMKI

Project information

- **Area** - 20 000 m³
- The building includes departments of radionuclide and radiation diagnostics and therapy, medical rooms for primary and consultative reception of patients, staff and administration offices, a conference room and other auxiliary facilities.
- The concept of the "smart home" automation system is provided.
- **Implementation period:** 2019 – 2021
- Investments amounted to 8 billion rubles, of which 3.9 billion rubles were provided to the company by VTB Bank.



JSC MEDICINA, ONCOLOGICAL CLINIC, KHIMKI

The role of the HPBS team

The goal was to achieve LEED Silver certification during the construction phase and demonstrate the project's reduced environmental impact and the creation of a work and leisure environment.

Our role:

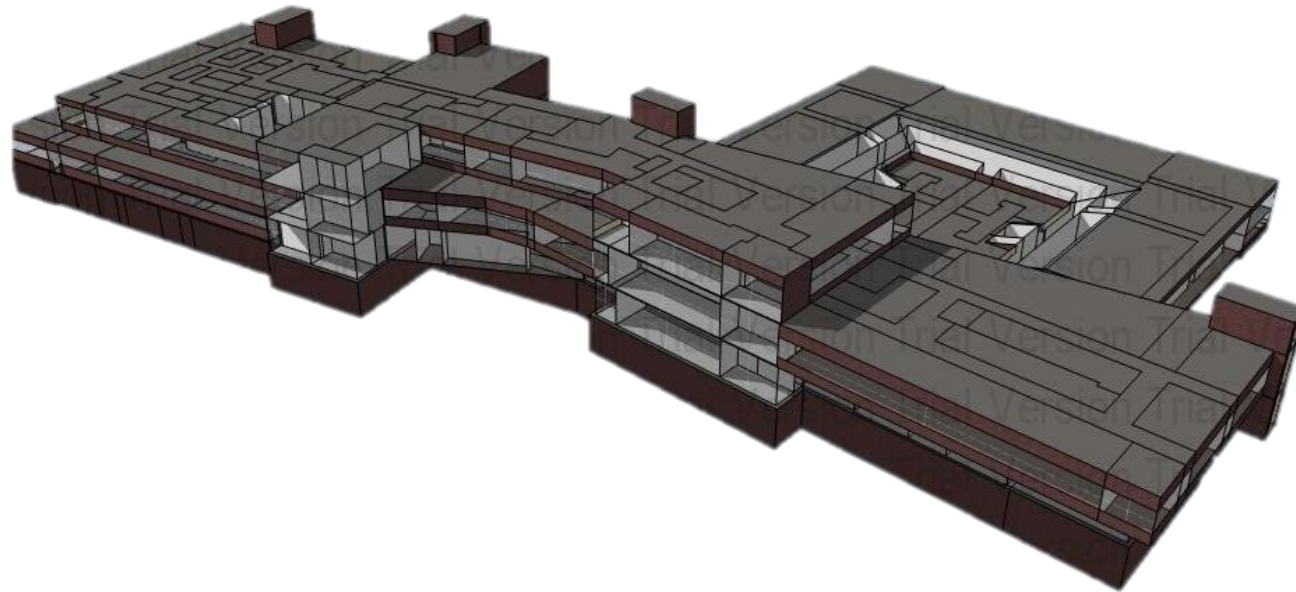
- LEED turnkey building certification
- Development of a certification strategy
- Development of the concept of minimal environmental impact
- Energy efficiency concept
- Digital Simulation
- Acceptance of engineering systems
- Solar power plant calculations
- Passing the LEED examination of the design stage in the USA

Implementation period: 2019-2021

Key achievements:

The project of the Oncological Outpatient Diagnostic Center in Khimki (Moscow Region) was the first in Russia to receive a LEED certificate for medical institutions. The project used an integrated approach that achieved the LEED certification level without significant additional costs through balanced solutions conceived at the conceptual stage. Energy consumption is reduced by **17%**, water costs - almost 2 times compared to similar facilities.

Digital model of an oncology clinic



While designing a LEED building, a digital energy model is built to optimize energy costs. A mandatory requirement for LEED certification is proof of high energy efficiency.

LEED buildings consume an average of 25% less energy and have 19% lower operating costs.

Oncological Center of Nuclear Medicine – JSC Medicine Certification LEED



Energy Efficiency and RES:

- Solar power plant 110 kW
- Automation of ventilation modes
- Energy efficiency of enclosing structures
- Automation and LED lighting
- Efficient refrigeration center

Reduction of CO2 emissions:

- For 256 tons of CO₂e
- By 15%

Cost reduction:

- 3.7 million per year for energy consumption
- 42 million for connection to networks



LEED V4 BD+C: HEALTHCARE

ATTEMPTED: 57, DENIED: 2, PENDING: 4, ANTICIPATED: 43 OF 110 POINTS



INTEGRATIVE PROCESS 1 OF 1

Integrative Project Planning and Design	Y
Integrative Process	1 / 1



LOCATION AND TRANSPORTATION 7 OF 9

LEED for Neighborhood Development Location	0 / 9
Sensitive Land Protection	1 / 1
High Priority Site	0 / 2
Surrounding Density and Diverse Uses	1 / 1
Access to Quality Transit	2 / 2
Bicycle Facilities	1 / 1
Reduced Parking Footprint	1 / 1
Green Vehicles	1 / 1



SUSTAINABLE SITES 7 OF 9

Construction Activity Pollution Prevention	N
Environmental Site Assessment	Y
Site Assessment	1 / 1
Site Development - Protect or Restore Habitat	0 / 1
Open Space	1 / 1
Rainwater Mgmt	2 / 2
Heat Island Reduction	1 / 1
Light Pollution Reduction	1 / 1
Places of Respite	1 / 1
Direct Exterior Access	0 / 1



WATER EFFICIENCY 9 OF 12

Outdoor Water Use Reduction	Y
Outdoor Water Use Reduction	2 / 2
Indoor Water Use Reduction	Y
Indoor Water Use Reduction	4 / 7
Building-Level Water Metering	Y
Cooling Tower Water Use	2 / 2
Water Metering	1 / 1



ENERGY AND ATMOSPHERE 11 OF 35

Fundamental Commissioning and Verification	N
Minimum Energy Performance	Y
Optimize Energy Performance	8 / 20
Building-Level Energy Metering	Y
Fundamental Refrigerant Mgmt	Y
Enhanced Commissioning	0 / 6
Advanced Energy Metering	1 / 1
Demand Response	0 / 2
Renewable Energy Production	1 / 3
Enhanced Refrigerant Mgmt	1 / 1
Green Power and Carbon Offsets	0 / 2



MATERIALS AND RESOURCES 0 OF 19

Storage and Collection of Recyclables	Y
Construction and Demolition Waste Mgmt Planning	N
PBT Source Reduction - Mercury	Y
PBT Source Reduction - Mercury	0 / 1
Building Life-Cycle Impact Reduction	0 / 5
Product disclosure & optimization - Environmental Product Declarations	0 / 2
Product disclosure & optimization - Sourcing of Raw Materials	0 / 2
Product disclosure & optimization - Material Ingredients	0 / 2
PBT Source Reduction - Lead, Cadmium, and Copper	0 / 2
Furniture and Medical Furnishings	0 / 2
Design for Flexibility	0 / 1
Construction and Demolition Waste Mgmt	0 / 2



INDOOR ENVIRONMENTAL QUALITY 4 OF 15

Minimum IAQ Performance	Y
Environmental Tobacco Smoke Control	Y
Enhanced IAQ Strategies	2 / 2
Low-Emitting Materials	0 / 3
Construction IAQ Mgmt Plan	0 / 1
IAQ Assessment	0 / 2
Thermal Comfort	1 / 1
Interior Lighting	1 / 1
Daylight	0 / 2
Quality Views	0 / 1
Acoustic Performance	0 / 2



INNOVATION 0 OF 6

Innovation	0 / 5
LEED Accredited Professional	0 / 1



REGIONAL PRIORITY CREDITS 4 OF 4

Reduced Parking Footprint	1 / 1
Rainwater Mgmt	1 / 1
Indoor Water Use Reduction	1 / 1
Thermal Comfort	1 / 1

TOTAL 43 OF 110

Advanced Infrastructure



Permeable parking

Bicycle infrastructure

Modern technologies



Rainwater collection station



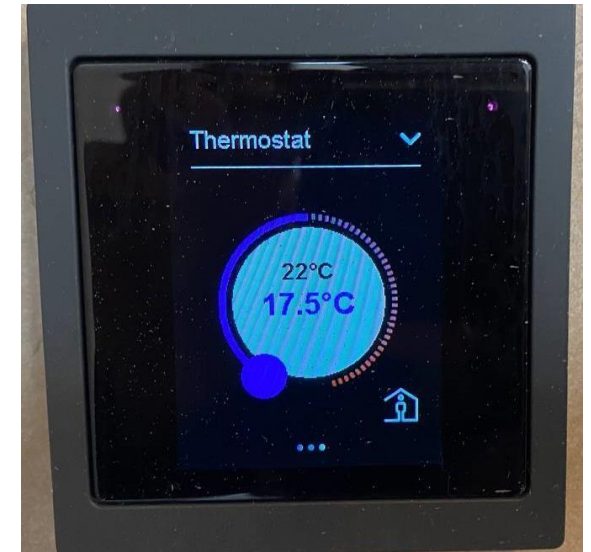
Electric chargers for vehicles

Comfortable environment

Daylight



Climate control



Socially sustainable, flexible project

Covid-helpful facility





Field of HPBS activity

HPBS is an international engineering and consulting company specializing in the development of accounting concepts for optimizing and offsetting the carbon footprint of companies and products, the development of engineering concepts for cities and buildings, energy supply strategies for territories, budgeting and payback periods for engineering infrastructure, climate engineering for territories, certification of buildings for international green LEED, BREEAM, WELL standards, digital modeling of buildings and territories.